APPENDIX A
Ergonomic Risk Factors - Examples [Non-Mandatory]

Ergonomic risk factors are characteristics of a job that contribute to creation of ergonomic hazards that may negatively impact job performance including quality, productivity, as well as worker health.

Work-related risk factors are present at varying levels for different jobs and tasks. The mere presence of a risk factor does not necessarily mean that an employee performing a job is at undue risk of injury. Generally, the greater the exposure is to a single risk factor or combination of risk factors, the greater the probability of a musculoskeletal disorder.

For job assessment of ergonomic risk factors consider the following:

1. Awkward postures and motions
2. Cold temperature
3. Contact stress
4. Forceful exertions
5. Repetition
6. Vibration

Table 1

Risk Factor Descriptions with Examples

1	**Awkward postures and motions**	Posture is the position your body is in that affects muscle groups involved in physical activity. Awkward postures and motions include repeated or prolonged reaching, twisting, bending, kneeling, squatting, working overhead with your hands or arms, or holding fixed positions.
		Graphic
2	**Cold temperature**	Exposure to low temperatures. Examples include: work involving the handling of frozen or refrigerated materials, the immersion of body parts in cold media, or the exposure to cold air exhaust. Also including gripping cold objects, cold work environments, and air-powered tool exhaust directed to hands.
		Graphic
3	**Contact stress**	Resting or pressing body parts against a hard surface or sharp edge can result in compression of nerves, muscles, tendons, blood vessels and other tissues. Examples include: pounding with the palm of hand; tools digging into the palm of hand; tools digging into the sides of fingers; resting the knee, elbow, forearm, or wrist on a hard surface or sharp edge.
		Graphic

4	**Forceful exertions**	Force is the amount of physical effort required to perform a task such as heavy lifting, or to maintain control of equipment or tools. The amount of force exerted depends on the type of grip, the weight of an object, body posture, the type of activity and the duration of the task. Examples include: tasks involving gripping, lifting, pushing, pulling, holding, assembling, connecting, using a hand tool, and maintaining control of a powered tool.
		Graphic
5	**Repetition**	A motion or activity that is repeated over and over again.
		Graphic
6	**Vibration**	Operating vibrating tools such as sanders, grinders, chippers, routers, drills, chain saws and other saws, jackhammers, or sitting/standing on vibrating surfaces such as driving a truck.
		Graphic

Risk factors may be evaluated by the following exposure properties:

1. Duration
2. Magnitude
3. Recovery

Table 2

Exposure Properties Descriptions with Examples

1	**Duration**	A period of time over which one is exposed to risk factors or the period of time considered as recovery.
2	**Magnitude**	The amount of each risk factor involved. Examples include: the amount of force applied, the repetition rate, or the angle/position of the back.
		Graphic
3	**Recovery**	Periods of reduced exposure to risk factors. Examples include: formal rest breaks, pauses in work activity, or other job duties/tasks that provide specific body parts the opportunity to rest.